**Figure 1**

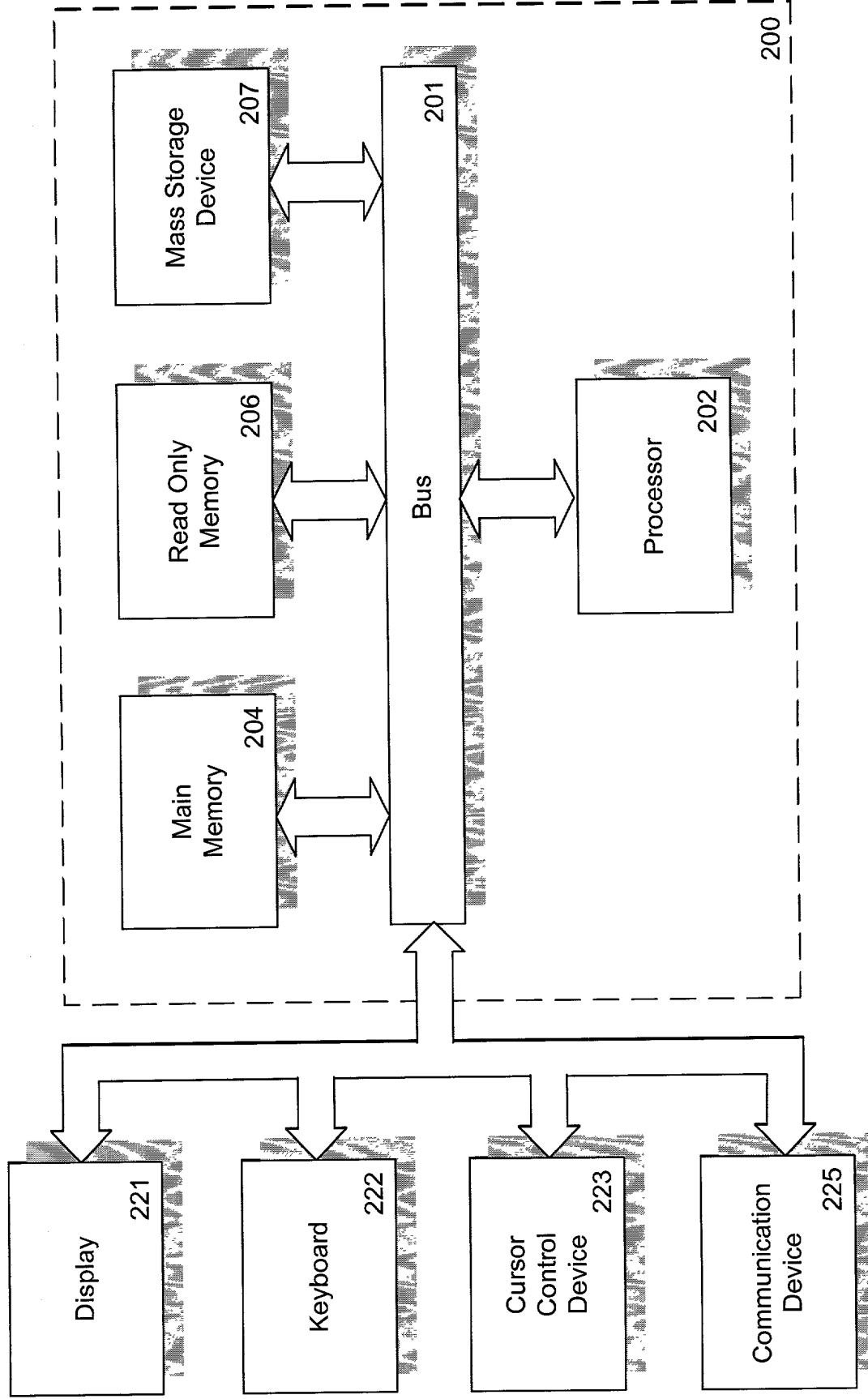


Figure 2

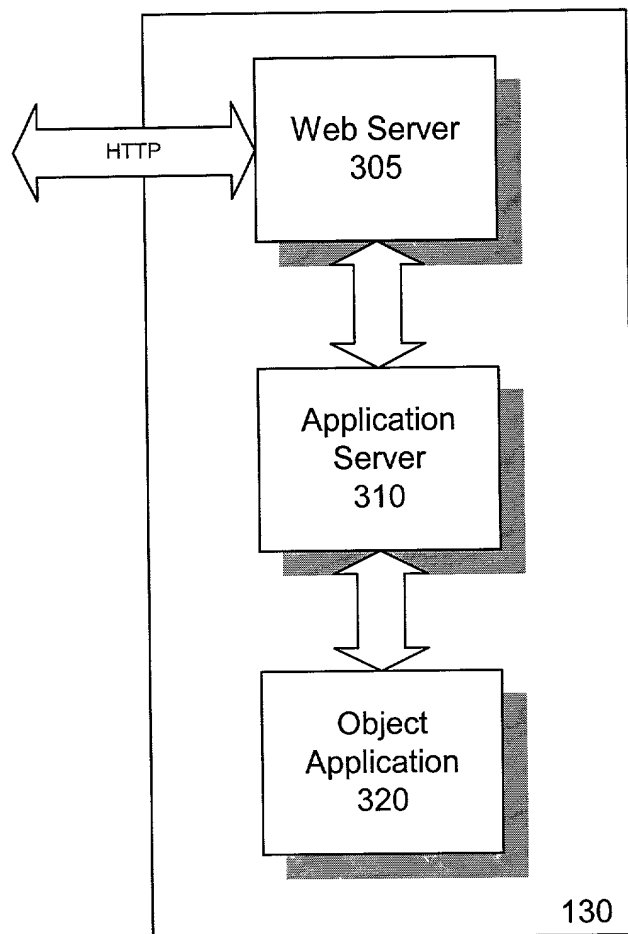


Figure 3

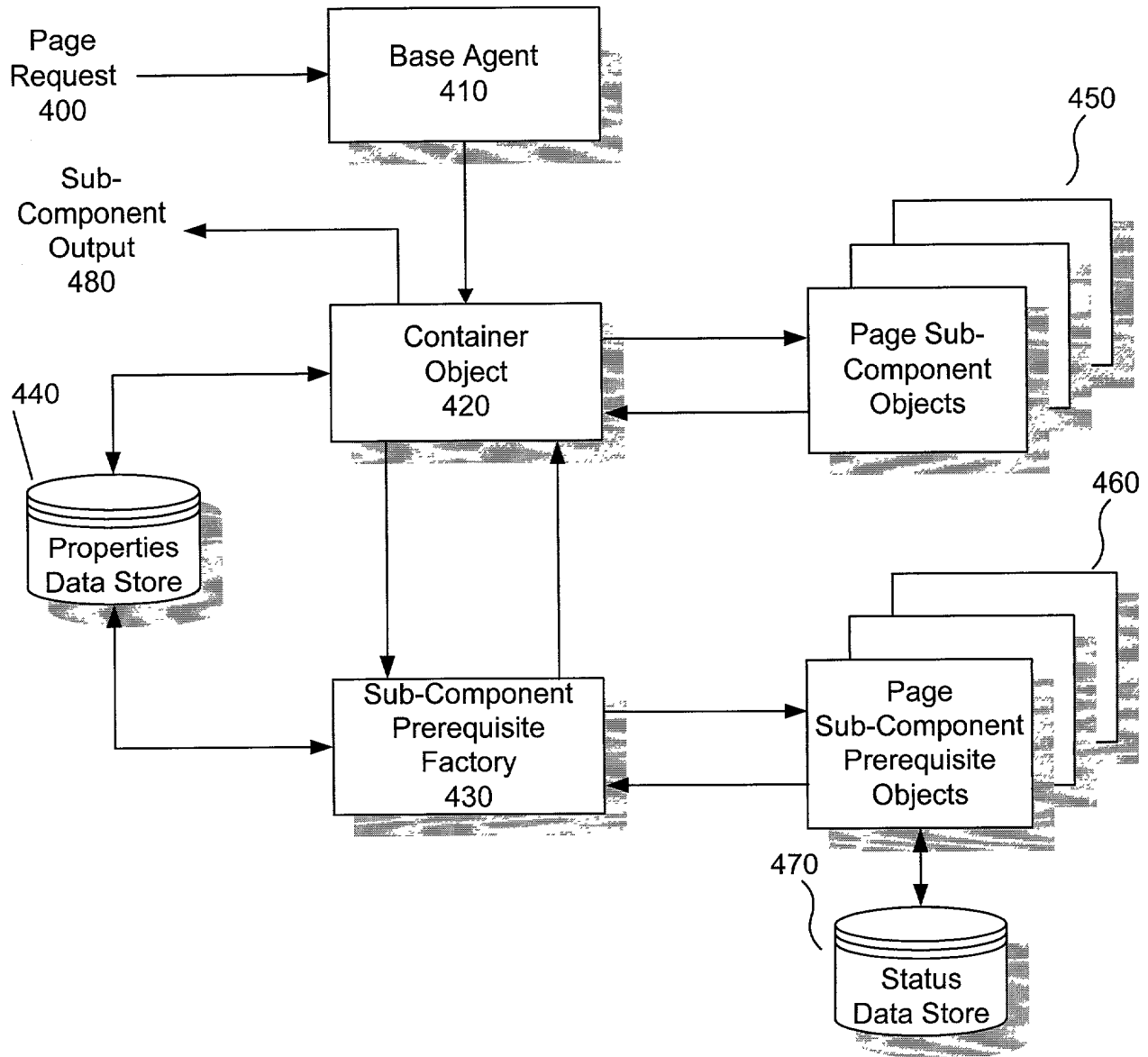


Figure 4

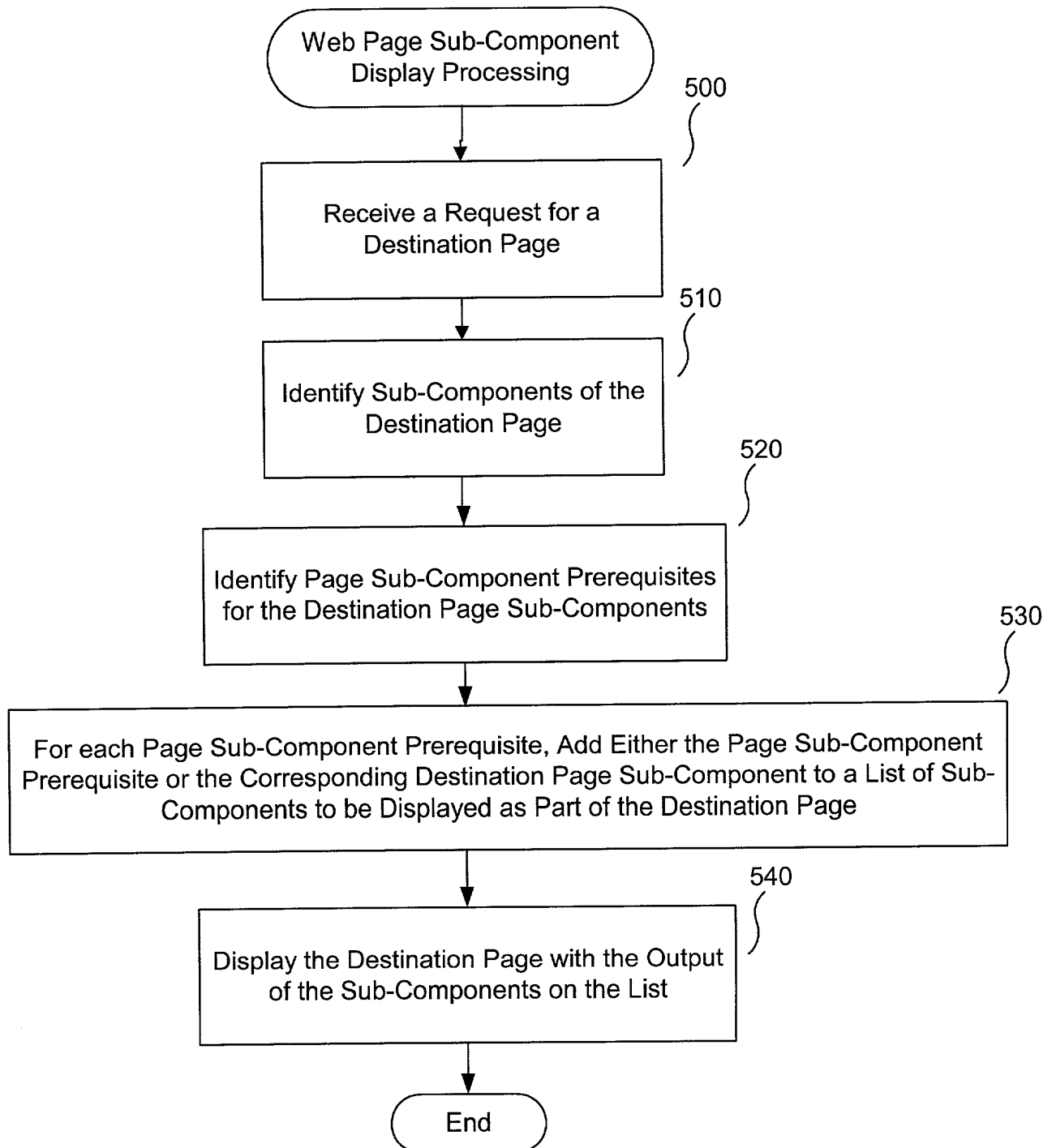


Figure 5A

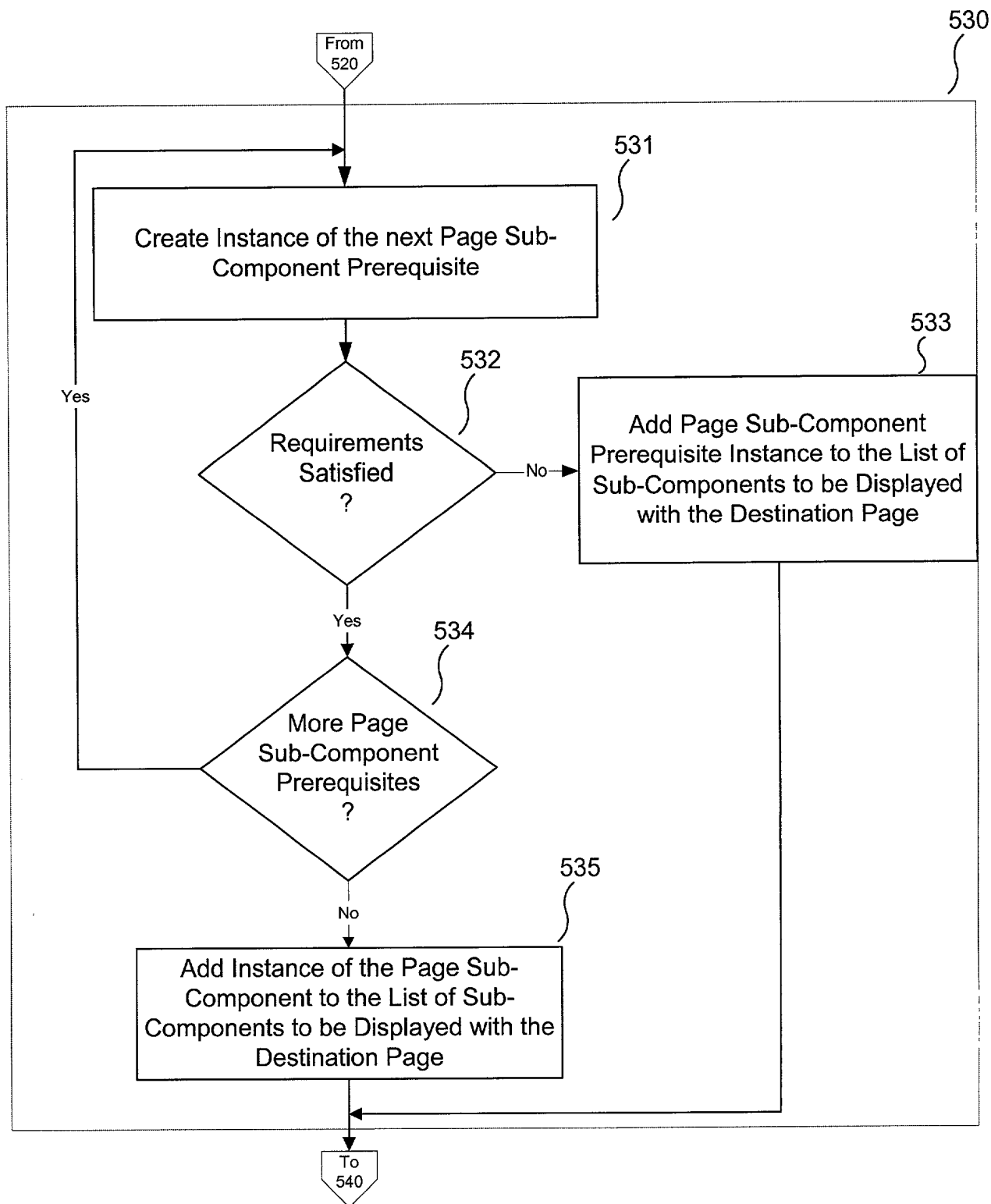


Figure 5B

FIG. 6

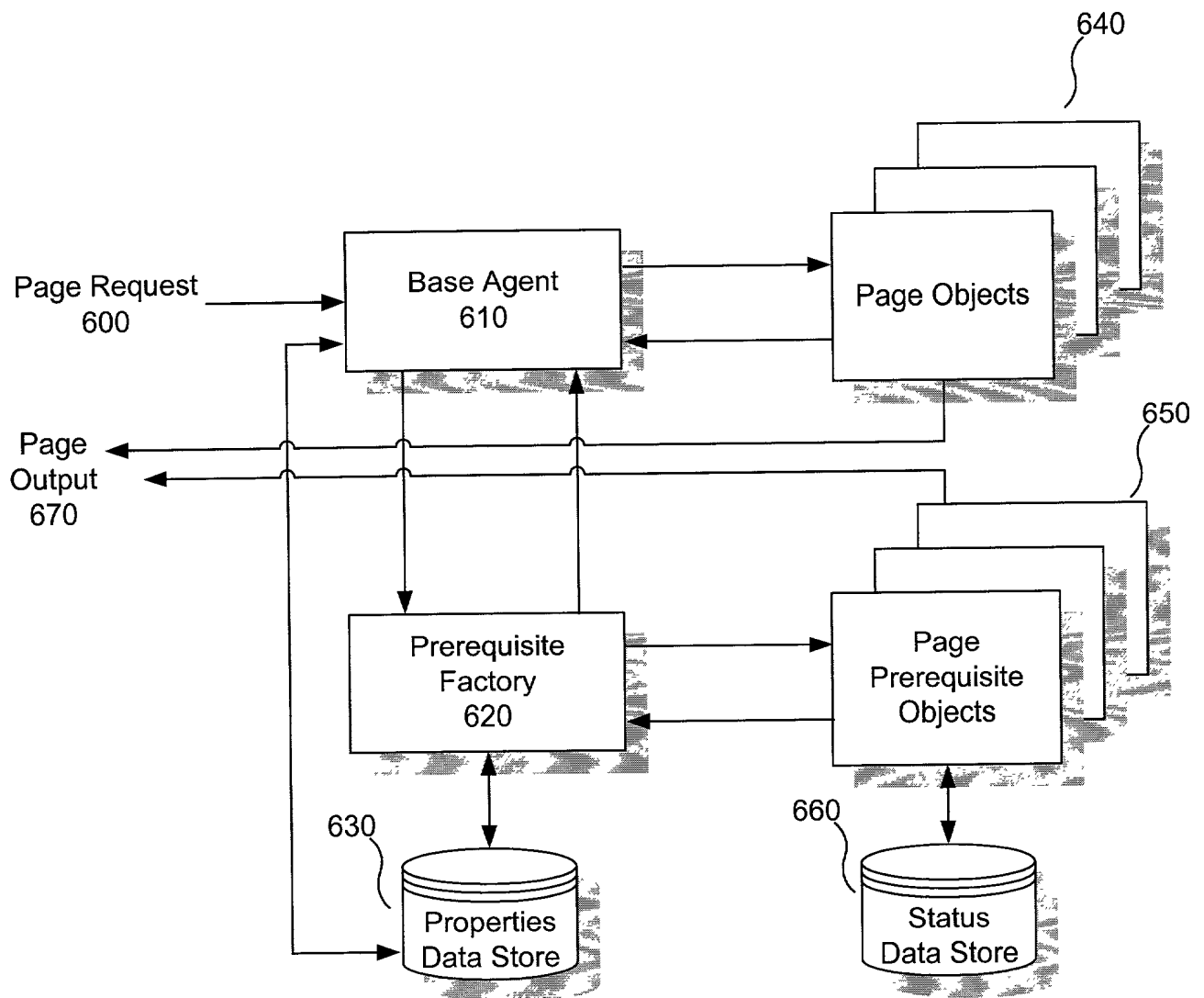


Figure 6

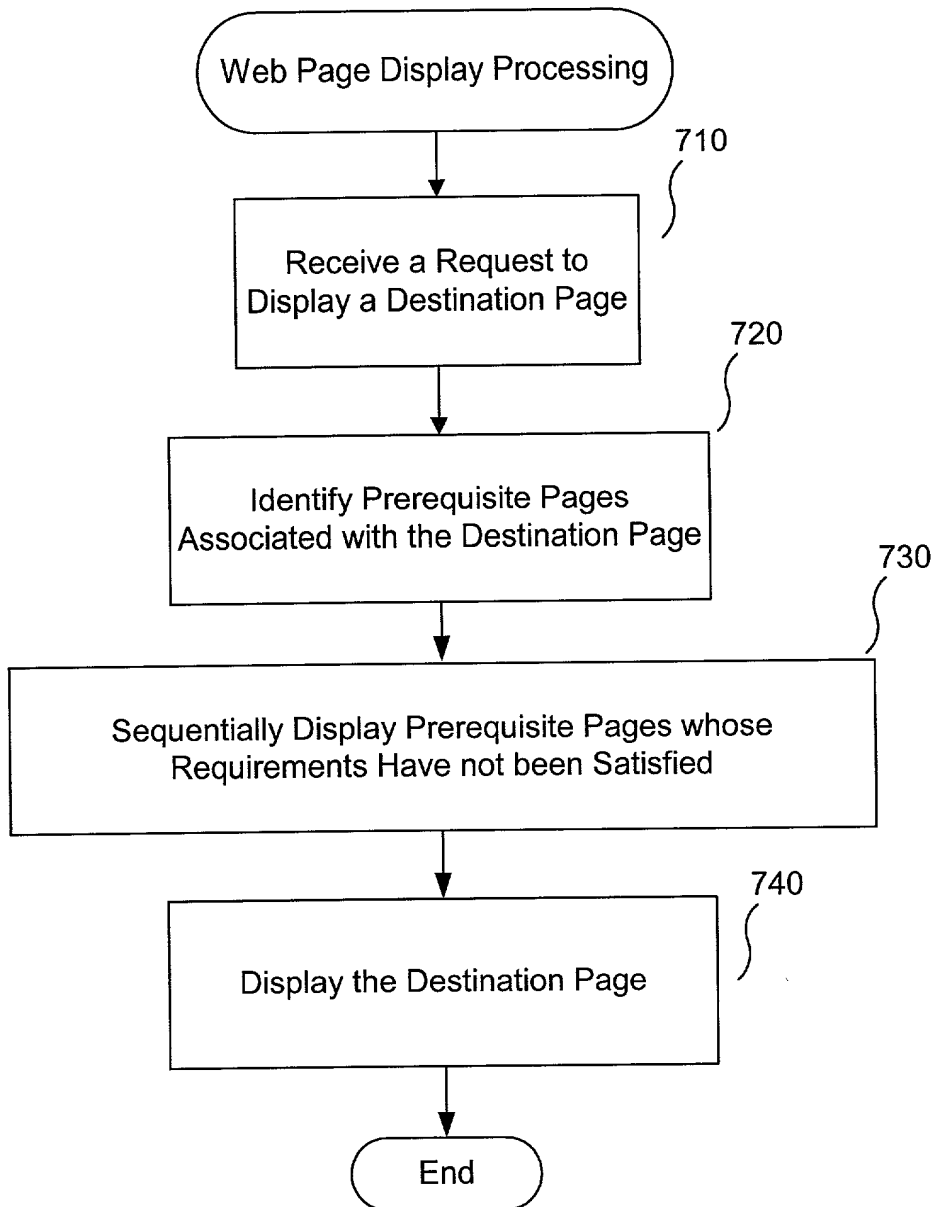


Figure 7A

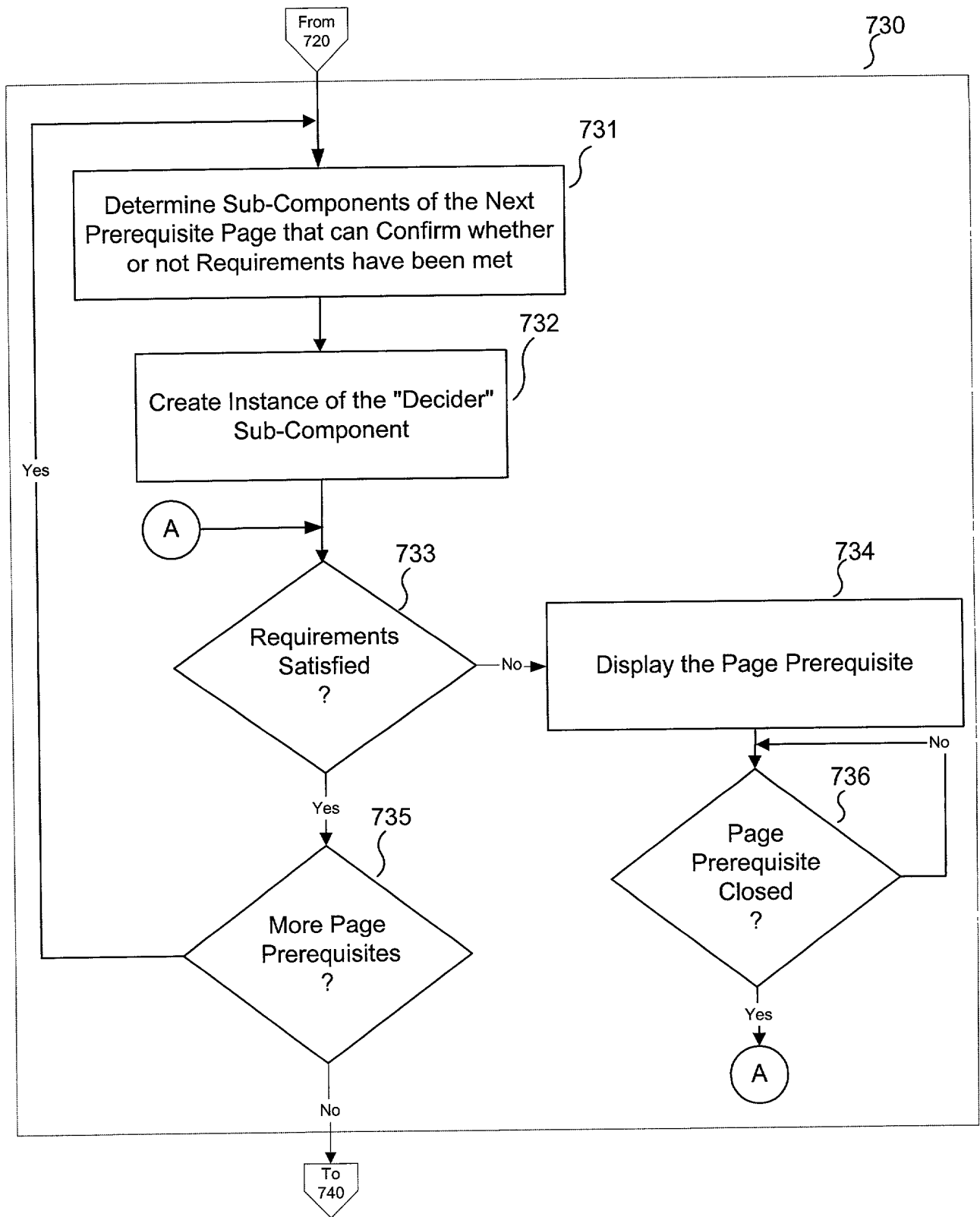


Figure 7B

810
<Attribute> = <Value>
820
prompt1 = please enter your name

Figure 8 (Prior Art)

910
<Object>.<Attribute> = <Value>
920
Obj1.attr1 = val11
930
Obj1.attr2 = val12
940
Obj2.attr1 = val21
950
Obj2.attr3 = val23
960
Trading.prompt1 = please enter your name

Figure 9

<Object>.extends = <anotherObject> 1010

Obj1.attr1 = val11 1020
Obj1.attr2 = val12 1030

Obj2.extends=Obj1 1040
Obj2.attr2 = val22 1050
Obj2.attr3 = val23 1060

Figure 10

<Context>.<Object>.<Attribute> = <Value> 1110

Obj1.attr1 = val11 1120
Obj1.attr2 = val12 1130
Page1.Obj1.attr2 = val112 1140

Figure 11

<Context>.extends = <anotherContext> 1210

Obj1.attr1 = val11 1220
Obj1.attr2 = val12 1230
Page1.Obj1.attr2 = val112 1240

Page2.extends = Page1 1250
Page2.Obj1.attr2 = val212 1260

Figure 12

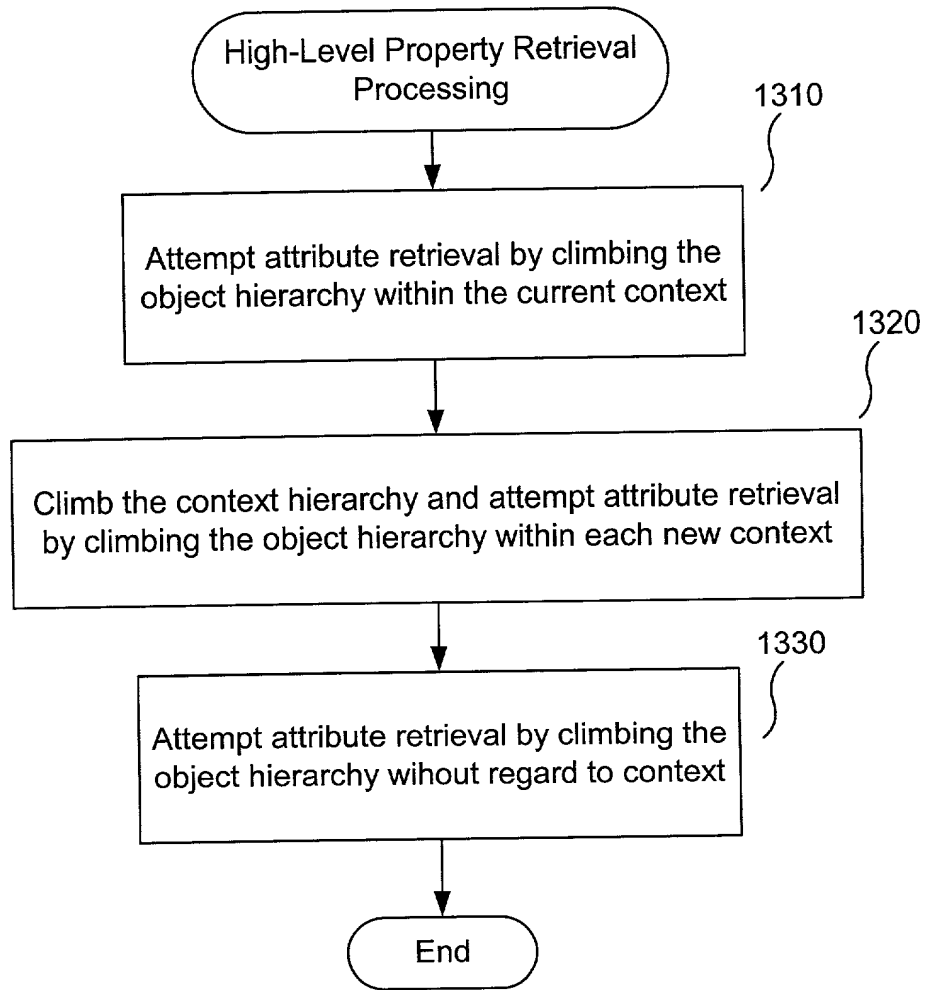


Figure 13

Page2.extends=Page1
Page3.extends=Page2

Obj2.extends=Obj1
Obj3.extends=Obj2

Figure 14A

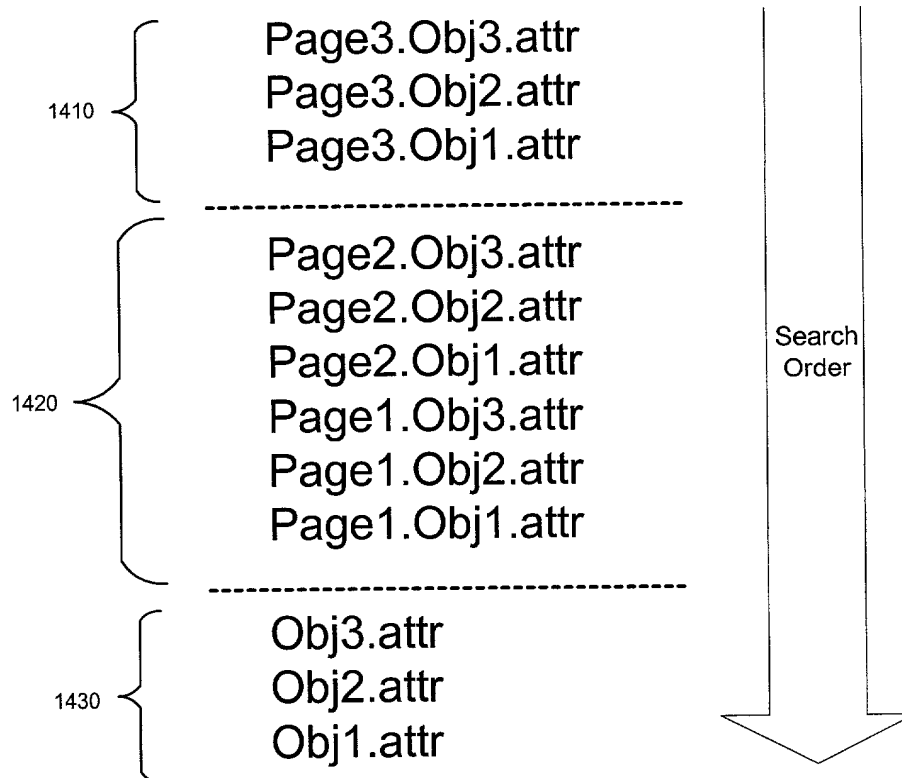


Figure 14B

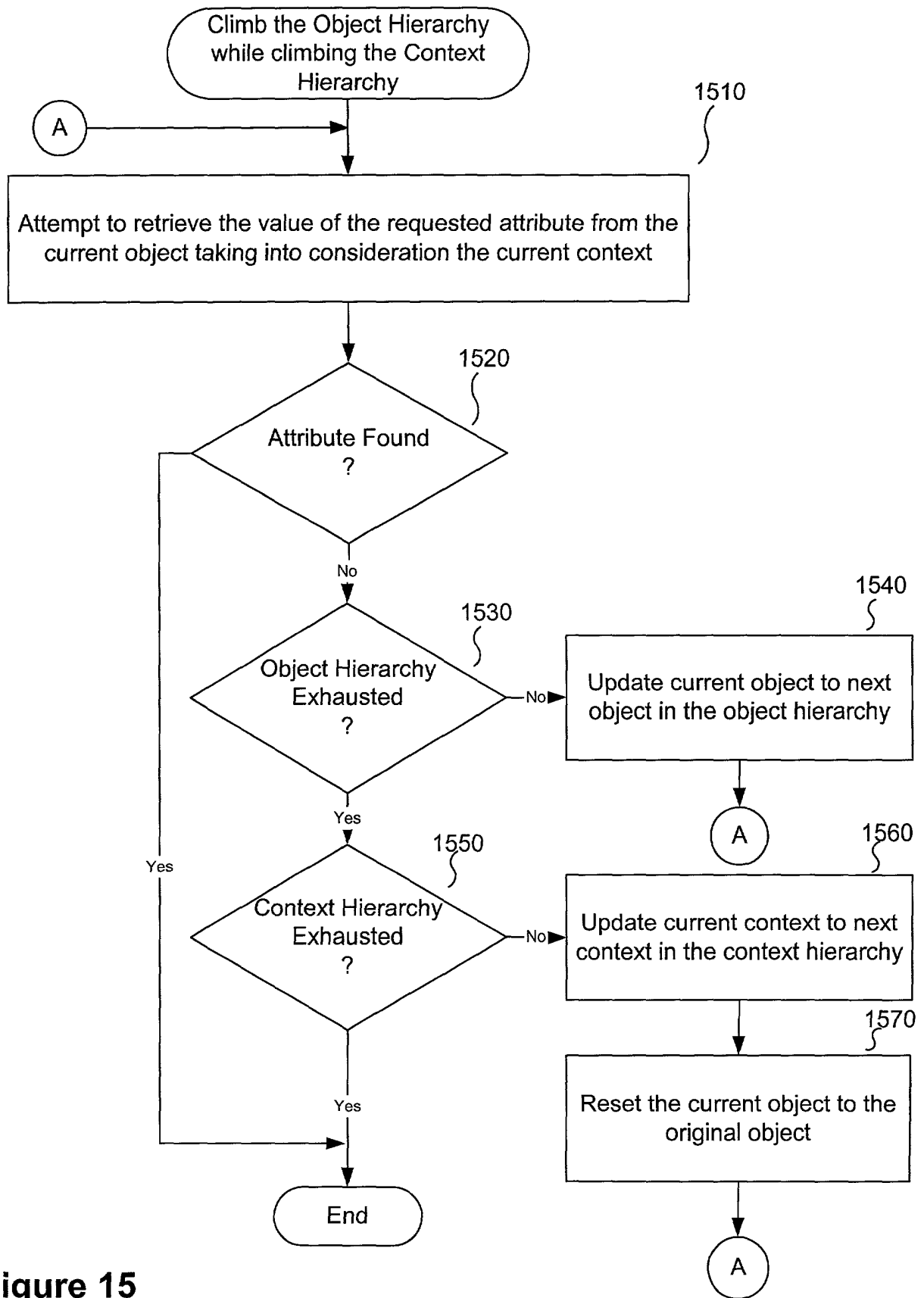


Figure 15

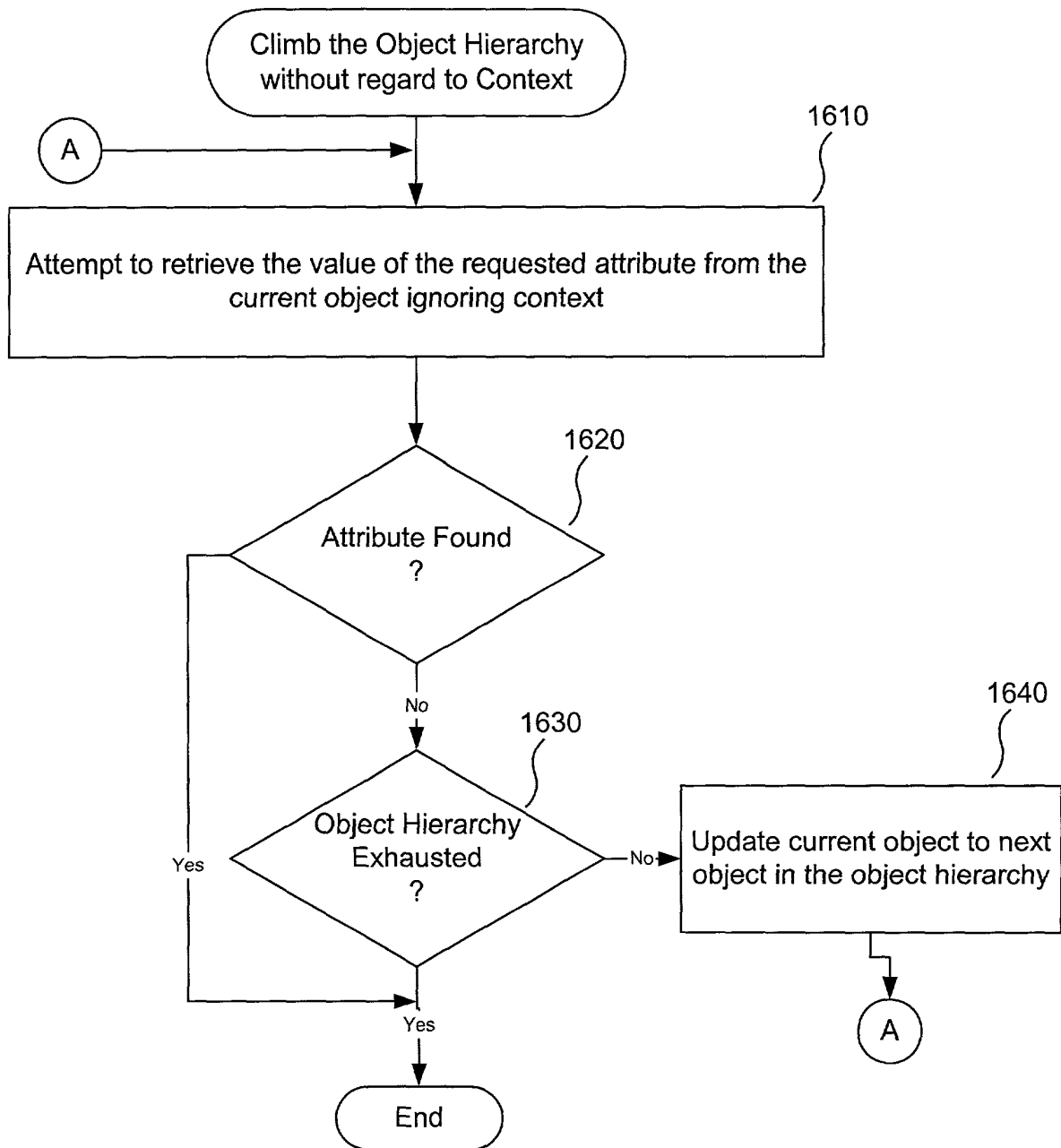


Figure 16

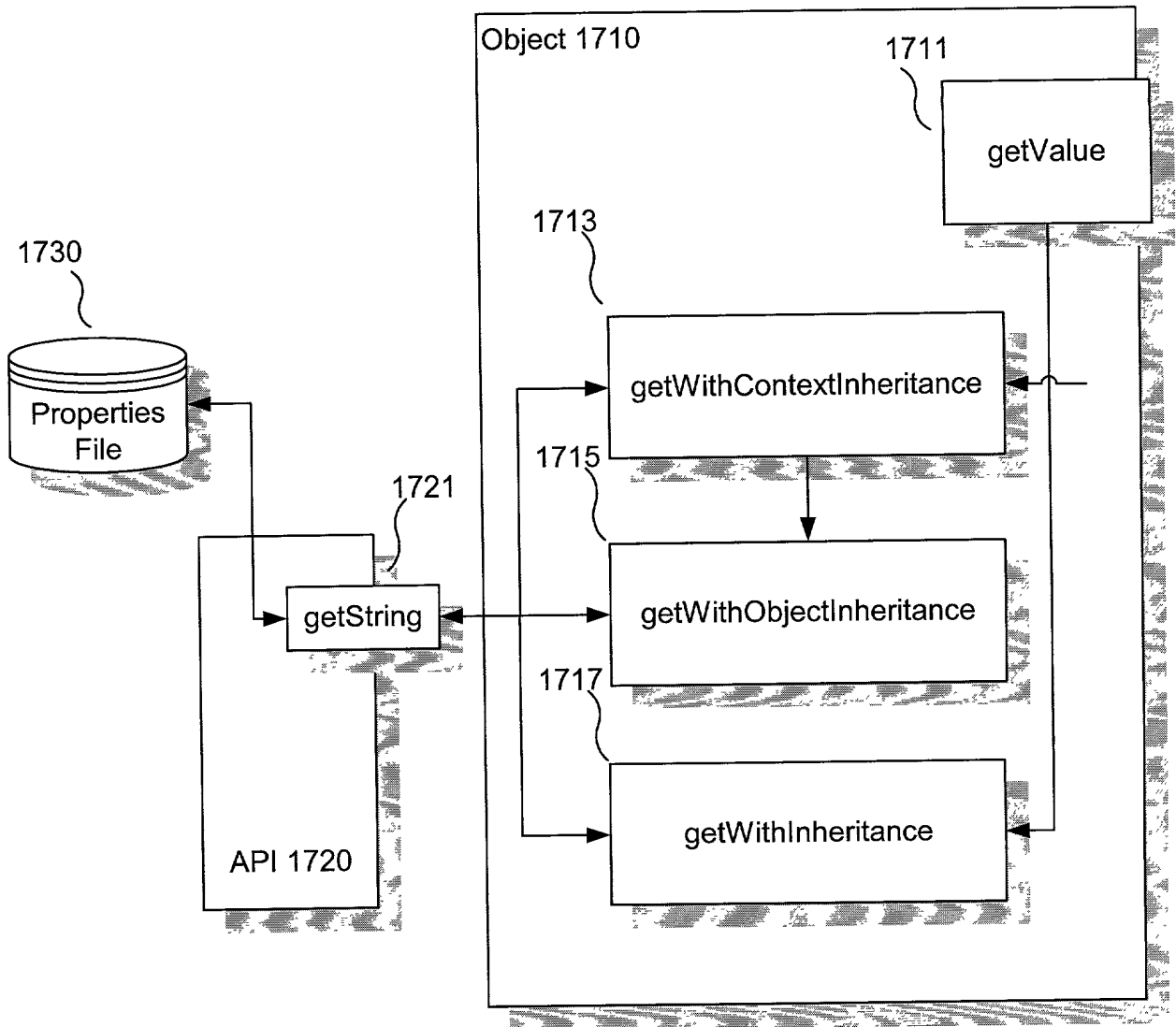


Figure 17


```
1.  String getValue( String attrib ) {  
2.  
3.      // get the container name of this object  
4.      String context = getContextName();  
5.  
6.      // get the name of the class of this executing object  
7.      String object = getClass().getName();  
8.  
9.      // check to see if within this context a value is defined for the  
10.     // specified attribute for objects of the currently executing object's  
11.     // type, or for any of its parent objects  
12.  
13.     String result = getWithContextInheritance( context, object, attrib );  
14.  
15.     if (result == null) { // if it's null it didn't find it.  
16.  
17.         // now try to find the value of the attribute of the object  
18.         // by ignoring the context  
19.  
20.         // this will look for the attribute in all objects that are extended by  
21.         // the current object  
22.  
23.         result = getWithInheritance( object, attrib );  
24.  
25.     } // end if  
26.  
27.     return result;  
28.  
29. } // end getValue
```

Figure 18

```

1.  String getWithContextInheritance(
2.      String context, String object, String attrib) {
3.
4.      // check if the attrib is found in the current context by climbing up
5.      // the object hierarchy if necessary
6.      String result = getWithObjInheritance( context, object, attrib );
7.
8.      if (result == null) { //didn't find it in the current context
9.          // check if this context extends another context
10.         context = ResourceBundle.getString( context + ".extends" );
11.
12.         //context now contains the name of the parent context, if any
13.         if (context != null) // found a parent context
14.             // this is a recursive call that looks for the attribute
15.             // and climbs up the context hierarchy
16.             result = getWithContextInheritance( context, object, attrib );
17.
18.         } //end if
19.
20.         return result;
21.
22.     } // end getWithContextInheritance

```

Figure 19

```

1.  String getWithObjInheritance( String context, String object, String attrib ) {
2.      // concatenate context, ".", the object, ".", and the attrib
3.      String lookFor = context + "." + object + "." + attrib;
4.
5.      // check if the combined attribute is found in the resource bundle
6.      String result = resourceBundle.getString( lookFor );
7.
8.      if (result == null) { // didn't find it in the current object
9.          // check if object extends another object, meaning
10.         // it has a parent.
11.         object = resourceBundle.getString( object + ".extends" );
12.
13.         //object now contains the name of the parent, if any
14.         if (object != null) // found a parent object
15.             // this is a recursive call that climbs up the
16.             // object's hierarchy while keeping the context unchanged.
17.             result = getWithObjInheritance( context, object, attrib );
18.
19.         } // end if
20.
21.         return result;
22.
23.     } // end getWithObjInheritance

```

Figure 20

```

1.  String getWithInheritance( String object, String attrib ) {
2.      // concatenate the object, ".", and the attrib
3.      String lookFor = object + "." + attrib;
4.
5.      // check if the combined attribute is found in the resource bundle
6.      String result = resourceBundle.getString( lookFor );
7.      if (result == null) { //didn't find it in the current object
8.          // check if object extends another object, meaning
9.          // it has a parent.
10.         object = resourceBundle.getString( object + ".extends" );
11.
12.         // object now contains the name of the parent, if any
13.         if (object != null) // found a parent object
14.             // this is a recursive call. Look for the attribute
15.             // in the parent or its parents
16.             result = getWithInheritance( object, attrib );
17.
18.         } // end if
19.
20.         return result;
21.
22.     } // end getWithInheritance

```

Figure 21